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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,012	12/16/2003	Yingxue Li	P-9254-US	5577

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EXAMINER	
JACKSON, BLANE J	

ART UNIT	PAPER NUMBER
2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/737,012	LI ET AL.	
	Examiner	Art Unit	
	Blane J. Jackson	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statements filed 16 December 2003, 25 April 2005, 15 August 2005 and 18 August 2005 have been made of record.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 8-10, 15-17, 23, 26-28, 30, 34, 35 and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-3, 8-10 and 15-17, 23, 27, 35 and 40 introduce contradictory claim language as "one or more quality indicators comprise at least one of" versus "and any combination of the preceding". It is suggested to delete the second phrase to be consistent with claim 4 and other similar subsequent claims.

Claim 23 further reads "calculating a second quality indicator according to the plurality of signals" and "the one or more quality indicators comprise a second quality indicator associated with the second plurality of signals" where it is not clear whether the second quality indicator is associated with a first, second or both plurality of signals.

As to claim 28, it is not clear whether a system or an adjuster is adjusting a signal.

Claims 26, 30 and 34 read on "receiving a transmit automatic gain control signal and generating the at least some of the one or more quality indicators according to the transmit automatic gain control signal" whereas, claims 1 and 27, for example, establish a transmit AGC signal is an individual quality indicator; consequently it is unclear how another quality indicator is generated from the transmit AGC signal, a quality indicator in itself.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 7-12, 14-19, 21, 22 and 24-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Dino et al. (US 6,795,411).

As to claims 1, 8, 15, 22, 24, 28 and 32, Dino teaches a method, system, logic for and apparatus for adjusting a signal comprising:

Receiving a plurality of signals at an adjuster (figures 2 and 3, column 4, lines 35-67, receiver channel elements (200) operative to receive and adjust spread spectrum signals (202),

Determining one or more quality indicators by calculating at least some of the one or more quality indicators and the one or more quality indicators comprising as least one of a power control group boundary signal, a power control group index, a PN code per active finger, a reverse power control bit per active finger, an energy per chip over noise power spectral density ratio per active finger, a channel estimate I/Q per active finger, an energy per bit over noise power spectral density, a transmit AGC signal, a total receive power and any combination of the preceding (figure 3, column 5, lines 1-55, the pilot channel energy or the energy per chip per incident noise power of the received pilot channel is determined by the searcher (306) for application to a receiver channel element management module (206); column 5, line 56 to column 6, line 10, each receiver channel element produces or calculates received symbol information which includes the received symbol energy (210) on a per channel basis such as energy per symbol per incident received noise power),

Establishing a signal adjustment according to the one or more quality indicators (figures 3, column 5, lines 1-55, the receiver channel element management module (2060 is responsive to the transmit power control information and to the pilot energy (216) to determine whether a change of receiver finger assignment is suitable; column 10, lines 25-33, the transmit power control information generator (204) and the receiver channel element management module (206) may be suitably implemented as on or more algorithms and performed by a suitable processing device),

Adjusting the plurality of signals according to the signal adjustment to yield one or more adjusted signals (column 5, lines 1-55, the receiver channel element

management module (206) produces receiver channel element control information (214) to the receiver channel elements (200)).

As to claims 2, 9 and 16 with respect to claims 1, 8 and 15, Dino teaches the plurality of signals comprise a plurality of signals received at a mobile device (figure 2, column 4, lines 35-60, a receiver unit in a wireless mobile station or a wireless base station unit),

The one or more quality indicators comprise at least one of a power control group boundary signal, a power control group index, a PN code per active finger, an energy per chip over noise power spectral density ratio per active finger, a channel estimate I/Q per active finger, an energy per bit over noise power spectral density, a total receive power and any combination of the preceding (column 5, lines 26-66, pilot energy (216) such as Ec/Io to obtain the pilot energy per time profile, an energy per chip indication and the received symbol energy (210) on a per channel basis).

As to claims 3, 10 and 17 with respect to claims 1, 8 and 15, Dino teaches the plurality of signals comprise a plurality of signals transmitted from a mobile device (figure 2, column 4, lines 35-60, a receiver unit in a wireless mobile station or a wireless base station unit),

The one or more quality indicators comprise at least one of a power control group boundary signal, a power control group index, a PN code per active finger, an energy per chip over noise power spectral density ratio per active finger, a channel estimate I/Q

per active finger, an energy per bit over noise power spectral density, a total receive power and any combination of the preceding (column 5, lines 26-66, pilot energy (216) such as Ec/Io to obtain the pilot energy per time profile, an energy per chip indication and the received symbol energy (210) on a per channel basis).

As to claims 4, 11 and 18 with respect to claims 1, 8 and 15, Dino teaches determining the one or more quality indicators further comprises receiving the one or more quality indictors from a baseband processor (figure 3, column 3, lines 19-29 and column 5, line 56 to column 6, line 10, each receiver channel element (200) produces received symbol information (210) on a per channel basis).

As to claims 5, 12 and 19 with respect to claims 1, 8 and 15, Dino teaches determining the one or more quality indicators further comprises calculating the one or more quality indicators according to the plurality of signals (figure 3, column 5, line 56 to column 6, line 10, each receiver channel element (200) produces received symbol information (210) on a per channel basis).

As to claims 7, 14 and 21 with respect to claims 1, 8 and 15, Dino teaches adjusting the plurality of signals according to the signal adjustment to yield the one or more adjusted signals further comprises adjusting at least one of a phase and an amplitude of at lest one signal of the plurality of signals (column 1, line 66 to column 3,

line 29, reassignment of each receiver finger to provide a level of finger (channel) performance if the received symbol energy is below a threshold value).

As to claims 25, 29 and 33 with respect to claims 24, 28 and 32, Dino teaches calculating at lest some of the one or more quality indicators further comprises receiving signal quality information and generating the at least some of the one or more quality indicators according to the signal quality information (figure 3, column 5, line 56 to column 6, line 10, each receiver channel element produces received symbol information which includes the received symbol energy (210) on a per channel basis).

As to claims 27, 31 and 35 with respect to claims 24, 28 and 32, Dino teaches the one or more quality indicators comprising as least one of a power control group boundary signal, a power control group index, a PN code per active finger, a reverse power control bit per active finger, an energy per chip over noise power spectral density ratio per active finger, a channel estimate I/Q per active finger, an energy per bit over noise power spectral density, a transmit AGC signal, a total receive power and any combination of the preceding (figure 3, column 5, lines 1-55, the pilot channel energy or the energy per chip per incident noise power of the received pilot channel is determined by the searcher (306) for application to a receiver channel element management module (206); column 5, line 56 to column 6, line 10, each receiver channel element produces or calculates received symbol information which includes the received symbol

energy (210) on a per channel basis such as energy per symbol per incident received noise power).

As to claim 36, Dino teaches a system for adjusting a signal comprising:

An antenna system operable to receive and transmit a plurality of signals (figure1, column 3, lines 30-50, MS (102b) and base station (104n) comprise an antenna system to function in the wireless CDMA telephone network),

One or more adjusters operable to:

Determine one or more quality indicators (figures 2 and 3, column 4, lines 35-67, receiver channel elements (200) operative to receive and adjust spread spectrum signals (202); column 5, line 56 to column 6, line 10, each receiver channel element produces or calculates received symbol information which includes the received symbol energy (210) on a per channel basis such as energy per symbol per incident received noise power),

Establish a signal adjustment according to the one or more quality indicators (figures 3, column 5, lines 1-55, the receiver channel element management module (2060 is responsive to the transmit power control information and to the pilot energy (216) to determine whether a change of receiver finger assignment is suitable; column 10, lines 25-33, the transmit power control information generator (204) and the receiver channel element management module (206) may be suitably implemented as on or more algorithms and performed by a suitable processing device), and

Adjust the plurality of signals according to the signal adjustment (column 5, lines 1-55, the receiver channel element management module (206) produces receiver channel element control information (214) to the receiver channel elements (200)).

One or more converters operable to convert a frequency of the plurality of signals (figure 3, column 5, lines 26-55, a wireless receiver comprising a suitable down converter (310)),

A baseband processor operable to process the plurality of signals (figures 2 and 3, column 4, lines 35-60 and column 10, lines 26-33, transmit power control information generator (204), receiver channel element management module (206) and plurality of receiver channel elements (200) operative to receive and process digital baseband spread spectrum signals (202)).

As to claim 37 with respect to claim 36, Dino teaches the baseband processor is operable to provide at least some of the one or more quality indicators to the one or more adjusters (column 2, line 66 to column 3, line 18).

As to claim 38 with respect to claim 36, Dino teaches at least one of the one or more adjusters is operable to generate at least some of the one or more quality indicators (column 5, line 56 to column 6, line 10, each receiver channel element produces received symbol information which includes the received symbol energy (210) on a per channel basis).

As to claim 39 with respect to claim 36, Dino teaches an alternate source operable to provide at least some of the one or more quality indicators to the one or more adjusters (figure 3, column 5, lines 38-50, searcher (306)).

As to claim 40 with respect to claim 36, Dino teaches the one or more quality indicators comprising as least one of a power control group boundary signal, a power control group index, a PN code per active finger, a reverse power control bit per active finger, an energy per chip over noise power spectral density ratio per active finger, a channel estimate I/Q per active finger, an energy per bit over noise power spectral density, a transmit AGC signal, a total receive power and any combination of the preceding (figure 3, column 5, lines 1-55, the pilot channel energy or the energy per chip per incident noise power of the received pilot channel is determined by the searcher (306) for application to a receiver channel element management module (206); column 5, line 56 to column 6, line 10, each receiver channel element (200) produces or calculates received symbol information which includes the received symbol energy (210) on a per channel basis such as energy per symbol per incident received noise power).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6, 13, 20 and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dino (US 6,795,411) in view of Peterzell et al. (US 6,374,116).

As to claims 6, 13 and 20 with respect to claims 1, 8 and 15, Dino teaches determining the one or more quality indicators further comprises generating a reverse power control bit according to the received symbol energy in a mobile telephone operating in a CDMA system, column 4, lines 35-67, transmit power control generator (204), but does not teach generating a reverse power control bit according to the transmit AGC signal.

Peterzell teaches adjusting maximum transmit power in a CDMA portable phone wherein the output power controller (120) determines the automatic gain control signal to the transmit AGC amplifier based on a sample of the output transmit power level and the reverse link power control signal, figure 1, column 3, lines 50-58.

Since Dino teaches a closed loop transmit power control scheme for use in a CDMA system, column 1, line 58 to column 2, line 36, it would have been obvious to one of ordinary skill in the art at the time of the invention to alternatively base the reverse power control bit of Dino on the transmit AGC signal as produced by Peterzell for an alternative accurate representation of traffic channel energies due to rapid energy changes induced by a fast closed loop power control.

As to claims 41 and 42 with respect to claim 36, Dino teaches the baseband processor is operable to provide at least some of the one or more quality indicators to the one or more adjusters (column 5, lines 1-25),

The one or more adjusters comprises a receive adjuster operable to receive one or more receive signals of the plurality of signals form the antenna system and adjust the one or more receive signals (figure 2, column 4, lines 35-60).

Dino teaches a closed loop power control system comprising a transmitter operative to provide the plurality of signals and power control information to an antenna system to transmit the power control information to a base station, figure 2, transmitter (208), column 4, lines 61-67, but does not teach a transmit adjuster operable to adjust one or more transmit signals of the plurality of signals.

Peterzell teaches an apparatus for adjusting maximum transmit power in a CDMA portable phone comprising an output power controller (120) to determine the automatic gain control signal to the transmit AGC amplifier based on a sample of the output transmit power level and the reverse link power control signal, figure 1, column 3, lines 50-58.

Since Dino teaches a system to support a closed loop transmit power control scheme, column 1, line 58 to column 2, line 36, it would have been obvious to one of ordinary skill in the art at the time of the invention to realize the transmit adjuster circuits of Peterzell as the transmit power control of Dino to effectively adjust the transmit power in accordance to a locally generated quality indicator as well as the reverse link power control signal.

As to claim 43 with respect to claim 36, Dino teaches the one or more adjusters comprises *a receive adjuster* operable to determine one or more quality indicators by calculate at least some of the one or more quality indicators and receive at lest some of the one or more quality indicators from an alternative source to the baseband processor and provide the plurality of signals to the antenna system (figures 2 and 3, column 4, lines 35-63).

Dino teaches a closed loop power control system comprising a transmitter operative to provide the plurality of signals and power control information to an antenna system to transmit the power control information to a base station, figure 2, transmitter (208), column 4, lines 61-67, but does not teach a transmit adjuster operable to adjust one or more transmit signals of the plurality of signals.

Peterzell teaches an apparatus for adjusting maximum transmit power in a CDMA portable phone comprising an output power controller (120) to determine the automatic gain control signal to the transmit AGC amplifier based on a sample of the output transmit power level and the reverse link power control signal, figure 1, column 3, lines 50-58.

Since Dino teaches a system to support a closed loop transmit power control scheme, column 1, line 58 to column 2, line 36, it would have been obvious to one of ordinary skill in the art at the time of the invention to realize the transmit adjuster circuits of Peterzell as the transmit power control of Dino to effectively adjust the transmit power in accordance to a locally generated quality indicator as well as the reverse link power control signal.

Conclusion

The prior art made of record and not relied upon but considered pertinent to applicant's disclosure includes Ahmed et al. (US 5,946,346) and Ling et al. (US 7,085,239).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J. Jackson whose telephone number is (571) 272-7890. The examiner can normally be reached on Monday through Thursday, 7:30 AM-6:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.